UNIDO

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

THIRD CONSULTATION ON THE CAPITAL GOODS INDUSTRY WITH EMPHASIS ON RURAL TRANSPORT EQUIPMENT

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REPORT

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PREFACE

The System of Consultations is an instrument through which the United Nations Industrial Development Organization (UNIDO) serves as a forum for developed and developing countries in their contacts and discussions directed towards the industrialization of the latter countries. Participants in the Consultations include government officials, as well as representatives of industry, labour, consumer groups and others, as deemed appropriate by the Government concerned. The System facilitates negotiations among interested parties, at their request, either during or after the Consultation meetings.

Benefits deriving from this activity include the identification of obstacles to industrial development in developing countries; the monitoring of trends in world industry with a view to identifying action-oriented measures for increasing the industrial output of developing countries; and the search for new forms of international industrial co-operation in North-South and South-South relations.

Since the inception of the System[1/] in 1975, Consultations have been held on the following industries and topics: agricultural machinery, building materials, capital goods, fertilizers, fisheries, food processing, industrial financing, iron and steel, leather and leather products, non-ferrous metals, petrochemicals, pharmaceuticals, training of industrial manpower, vegetable oil and fats and wood and wood products. The System brings together sectoral decision-makers to deliberate on and propose concrete measures to accelerate the process of industrialization in developing countries. It has generated many innovations, particularly with respect to technological alternatives, integrated development and contractual arrangements. The many opportunities thus provided have led to the implementation of projects in technical assistance, investment promotion and technology transfer.

The Consultation process, by virtue of its consensual and normative character, has revealed itself to be an efficient vehicle for balancing co-operation. It is eminently suited to assist member countries in the formulation of strategies and policies for industrial development.

The System of Consultations operates under the continuous and close guidance of the Industrial Development Board of UNIDO. In addition to the annual reviews and occasional progress appraisals, the System in 1989 was subjected to an in-depth evaluation which concluded that it was, moreover, providing a major contribution to the development and formulation of UNIDO's own policies and programmes in specific sectors through integration and interaction with the Organization's other main activities.

1/ See Report of the Second General Conference of the United Nations Industrial Development Organization (ID/CONF.3/31), chapter IV, "The Lima Declaration and Plan of Action on Industrial Development and Co-operation", para.66.

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INTRODUCTION

1. The Third Consultation on the Capital Goods Industry with Emphasis on Rural Transport Equipment was held at Vienna from 4 to 8 December 1989. The Consultation was attended by 47 participants from 33 countries and one intergovernmental organization (see annex I).

Background to the Third Consultation

2. The Industrial Development Board, at its second session in October 1986, decided to include the Third Consultation on the Capital Goods Industry with Emphasis on Rural Transport Equipment in the programme of consultation meetings for the biennium 1988-1989. 1/

3. Initial preparatory work began by a review of UNIDO activities, in the form of technical co-operation and other projects, and of institutions concerning the development and promotion of specific types of transport equipment to support agricultural and rural development. Based on that assessment, the Secretariat carried out a global study of the role of transport in economic development. In addition, regional studies were undertaken in order:

(a) To analyse the current situation in the sub-sector of rural transport equipment in the developing countries;

(b) To assess the perceived transport requirements for agricultural and rural development;

(c) To determine policies and strategies to meet those requirements, as well as possibilities for the local manufacture of the rural transport equipment needed.

4. In further preparation for the Third Consultation, the Secretariat held a global preparatory meeting at Vienna from 29 May to 1 June 1989, which was attended by 18 participants from selected developed and developing countries, taking account of an equitable geographical distribution.

5. The participants in the global preparatory meeting recommended that the following issues were of particular importance for the development of the rural transport equipment sub-sector in developing countries and should be considered by the Consultation:

Issue 1. Strategies for the integrated development of rural transport equipment in developing countries

(a) National strategies and policies; integrated development objectives and instruments (multimodal and sectoral planning); support measures: agricultural credit, infrastructure, institutional framework, and research and development;

(b) Role of rural transport equipment in linking agriculture and industry, urban and rural areas and modern and traditional sectors;

1/ "Report of the Industrial Development Board on the work of its second session, 13 to 23 October 1986" (GC.2/2), annex I, IDB.2/Dec. 13.

(c) Rational integration of the different stages of manufacture and marketing including the main chains of agriculture production;

(d) Definition of priorities (types of equipment, supply of raw materials and their quantity and quality);

(e) Markets (estimates and projections, domestic, export, tariff/non-tariff barriers, marketing promotion).

Issue 2. Promotion of and international co-operation in local manufacture of rural transport equipment

(a) Development and operations (design, technological capabilities, raw materials, rehabilitation, small and flexible units, specialized plants, spare parts, repair and maintenance);

(b) Technology (acquisition, adaptation and application, know-how, combination of traditional and new technologies, cost-effectiveness);

(c) Human resource development (work-force, training at all levels, managerial and organizational skills, technology acquisition);

(d) Equipment (supply, spare parts, after-sale services, maintenance, standardization);

(e) Role of international organizations (technical assistance, human resource development, market analysis, support to technical centres, pilot plants);

(f) Regional and interregional co-operation (production complementarities, exchange of experience and information, role of industrialized countries);

(g) Financing (joint ventures, investment, loans).

AGREED CONCLUSIONS AND RECOMMENDATIONS

Issue 1: Strategies for the integrated development of rural transport equipment in developing countries

Conclusions

6. The Consultation underlines the complexity of the problems confronting the development of the transport equipment sub-sector, which prevent it from contributing effectively and efficiently to the achievement of economic and social objectives in rural areas in the context of prevalent and persistent hardships of rural life in the majority of developing countries and of predicted population explosions in the future.

7. The solutions of the problems are furthermore compounded by the diversity of the issues that need to be tackled at the macro-economic level, including transport infrastructure and rural development programmes. There is a variety of linkages that determines the demand for and supply of rural transport equipment; namely, the agriculture-industry linkage, the transport-industry linkage and the intra-industry linkages, notably the agro-industrial system and capital goods production, as well as the economic and social linkages that determine an expanding circuit of incomes and employment.

8. The demand for rural transport equipment is primarily determined by rural production needs and policies aimed at the allocation of national resources for raising standards of living in rural communities. Higher agricultural productivity and industrial diversification are the means by which the purchasing power of rural communities could be enhanced. Assuming that due consideration is given to macro-economic policies. the provision of the requisite transport infrastructure and the proper design of rural programmes, the timely development of rural transport equipment requires priority attention.

9. In the light of the above, the Consultation highlights the following basic considerations related to the development of the rural transport sub-sector:

(a) The development of rural transport equipment is crucial to the improvement of the income of the population of rural areas, mainly in the agricultural sector on the basis of an increase in the productivity and quality of the products of the different economic activities in rural areas;

(b) The impact of rural transport on the development of the rural areas depends mainly on the following aspects:

(i) Proper selection of transport equipment to transport agricultural products and inputs on-farm, between farms and from the place of production to the storage points or processing centres, as well as from the rural areas to the urban centres;

(ii) Local production of rural transport equipment appropriate to the socio-economic conditions prevailing in the rural areas, as well as the availability of raw materials, intermediate input and human expertise;

(iii) Availability of roads and other infrastructure facilities required for the efficient transport of the different types of products generated in the rural areas;

(c) The rural transport equipment industry is an extremely diversified industry that produces a large number of types of equipment of different levels of technological complexity from, for example, animal-drawn carts to trucks. The technological characteristics of these types of equipment have certain similarities to other agricultural machinery, which in several cases permit their common production in flexible polyvalent plants. In this context it is concluded that small and medium-scale enterprises can assume a critical role in the development of the sub-sector;

(d) Owing to the diversity of situations prevailing in developing countries, each country, according to its own local conditions, needs to establish its strategies, policies and promotional measures and to select the types of rural transport equipment and technologies to be used. The adoption of uniform solutions could endanger the development of rural transport equipment in most developing countries;

(e) There is a need for an integrated approach to the coherent development of rural transport equipment that will consider, inter alia, the main needs of the rural areas; the different products to be transported; the various modes of transportation; the linkages with ancillary facilities; and the articulations and complementarities in the production of rural equipment in local and national enterprises;

(f) The development of the rural transport equipment industry is facing obstacles in many developing countries owing to a lack of, or insufficiencies in:

(i) Strategies of development that give due consideration to rural transport equipment as an important industry in the overall development of transport equipment and capital goods in general;

(ii) National policies and promotional measures that could offer preferential treatment to the production of rural transport equipment based on local conditions and resources;

(iii) Institutional framework at the national, regional and rural levels that could permit co-ordination between all the actors involved, such as policy makers, producers, users, professional associations, centres of research and development, universities and the rural communities themselves;

(iv) Programmes of production complementarities between local and national enterprises that could permit the provision of input, parts and components;

(v) Design of rural transport equipment appropriate to local conditions;

(vi) Programmes of maintenance and training;

(vii) Utilization of the installed capacity of plants producing transport equipment where economies of scale play a key role in productivity; for example, in the manufacture of trucks;

(viii) Technology suitable to rural conditions, primarily geography, income of the users and producers and availability of local raw materials and input;

(ix) Financial resources that could permit the promotion of the local production of rural transport equipment.

10. The necessary condition for creating and developing the rural transport sub-sector is the formulation of strategic frameworks for rural development that take account of the determinant linkages, the resources required, the development of the requisite technologies and skills and the design of programmes in a comprehensive and coherent context.

11. Rural transport still entails extreme human exertion and hardship. Measures are necessary to alleviate this burden, especially with regard to women.

Recommendations

A. National measures

12. The Consultation agreed on the following:

(a) Governments should, when appropriate, adopt a multi-disciplinary approach to the formulation of strategies, policies and programmes to ensure that the development of the rural transport equipment industry contributes effectively to the achievement of the economic and social objectives of rural development programmes. Attention should be given to the role of women in rural transport;

(b) Governments should take appropriate measures to create a more favourable economic environment to promote investments in the sub-sector;

(c) Governments should, when appropriate, sensitize rural communities to the importance of the development of rural transport and, in this way, ensure their full participation in the planning and implementation of integrated rural development programmes in which the rural transport sub-sector could effectively play its crucial role;

(d) The development of rural transport equipment should be considered by Governments and other social actors involved in developing countries as an important means of contributing to self-sufficiency in food production through its contribution to increased productivity and the quality of agricultural production;

(e) Governments in developing countries should undertake a thorough policy review to identify those policies that are punitive to the smooth operation of the transport equipment sub-sector and should undertake appropriate consecutive measures;

(f) For the integrated development of rural transport equipment, developing countries should primarily consider the following aspects:

(i) The inclusion of the production of rural transport equipment in national strategies and plans of development;

(ii) Within bilateral and multilateral programmes for the development of the agriculture sector, Governments, when appropriate, should ensure that there are provisions for the development of the rural transport sector;

(iii) The articulation of programmes for the development of different modes of transportation and various types of production of rural transport equipment;

(iv) The prospects and programmes of development of the main agriculture and food chains, as well as of other key economic activities existing in the rural areas;

(v) The programmes of development of the communications infrastructures required for the different rural transport equipment to be used;

(vi) The linkage between agriculture and industry, as well as between the rural and urban areas;

(vii) Production complementarities between rural and urban centres, as well as between small-scale and national enterprises that produce transport equipment;

(viii) The strengthening of interaction and feedback between research centres and universities on the one hand, and the requirements of rural communities on the other;

(ix) Policies and promotional measures that will permit the establishment of a structure of relative prices that will promote the production of priority rural transport equipment and that will tend to maximize the incomes of the rural and agriculture producers, allowing them to have access to the acquisition of appropriate rural transport equipment;

(x) Policies and incentives for the promotion of appropriate technologies for rural transport equipment. To this effect, comprehensive screening and evaluation of imported technology to be used in the sub-sector should be undertaken to provide technological options;

(xi) An institutional framework that could permit co-ordination between the main actors involved, such as policy makers, producers, users, professional associations, centres of research and development, universities and rural communities;

(xii) Financial requirements, as well as sources of financing, for the implementation of an integrated approach to the development of the rural transport equipment industry;

(g) When promoting the development of the rural transport equipment industry, developing countries should, based on a thorough assessment of the actual and evolving needs of rural communities, put special emphasis on:

(i) The selection of the equipment to be produced;

(ii) The technology to be applied according to their own socio-economic conditions, technological capabilities and availability of resources;

(iii) Construction of the required infrastructures;

(iv) Provisions for maintenance and repair;

(h) For the sustained increase of productivity in small and medium-size enterprises located in rural areas, the following aspects should be considered:

(i) Design of the equipment suitable to the type of product to be transported, geographical conditions and the raw material available;

(ii) Giving greater support to, and making better use of, existing indigenous design and development facilities when developing rural transport equipment. The exchange of designs should be encouraged whenever possible;

(iii) Technology that could permit a flexible productive system based on local resources;

(iv) A product mix based not only on a variety of rural transport equipment with common technical characteristics, but also on agricultural machinery with technological similarities;

(v) Introduction of managerial techniques such as production planning, cost accounting and quality control that would permit appropriate manufacture in small batch production;

(vi) Standardization of production that could permit the exchange of parts and components between the different manufacturers of rural transport equipment;

(vii) Provision of training mainly in aspects of design, production planning, cost and quality control.

B. International co-operation

13. The Consultation agreed on the following:

(a) The promotion of programmes of production complementarities should be developed among developing countries from the same region or different regions in order to enlarge their markets, as well as to make better use of their production capacities;

(b) South-South co-operation between countries with similar needs should be promoted, which would lead to areas with a common economic framework in order to create bigger markets;

(c) Developing countries should promote the exchange of experiences in the fields of:

(i) Strategies and plans;

(ii) Design;

(iii) Research and development;

(iv) Training;

(v) Technology;

(d) Developed countries should assist developing countries in the development of their capabilities in the field of design and in the adaptation and mastering of technology;

(e) Innovative financing arrangements, such as enterprise partnerships between industries of developing and developed countries, with which international financial institutions could be associated, should be closely examined in order to facilitate access to the required funds by the rural transport industry of developing countries. It should be underlined in this context that even limited financial support in the sub-sector exercises a significant multiplier effect. In the framework of tripartite arrangements with which UNIDO would be associated, financing would be directed primarily to those pilot projects having the added dimension of demonstrated viability.

C. Multilateral co-operation through international organizations including UNIDO

14. The Consultation agreed on the following:

(a) UNIDO should assist developing countries in the development of strategic plans for rural development, giving due consideration to the key role played by the rural transport equipment industry. For this purpose, UNIDO should develop flexible guidelines for the integrated development of rural transport equipment. These guidelines should be tested in selected countries for improvement and further development, and widely disseminated;

(b) UNIDO should assist developing countries in the development of appropriate designs for their rural transport equipment according to local conditions. UNIDO should also assist developing countries in adapting technology to local conditions. UNIDO should consider giving technical assistance to developing countries in the field of standardization and in the introduction of managerial techniques such as production planning and cost and quality control.

Issue 2: Promotion of and international co-operation in local manufacture of rural transport equipment

Conclusions

15. The local manufacture of rural transport equipment is recognized as a catalytic factor in the rural development programmes of developing countries.

16. Engineering design and development centres could provide a basis for design and manufacture while farm mechanization centres could provide a basis for the marketing of rural transport equipment. The introduction of flexible and/or multi-purpose manufacturing possibilities could help resolve the problems of economies of scale. Pilot projects could be one way of determining the technical and commercial viability of this approach. Small and medium-scale enterprises could particularly play a crucial role in this context. They need, however, to be provided with a full range of extension services and support measures.

17. Managerial and market skills fundamentally determine the viability and profitability of transport equipment manufacturing. Training programmes need to be linked to agricultural priorities, transportation and manufacturing of transport equipment. Educational policies might give due consideration to providing the requisite skills for integrated rural development programmes.

The Consultation recognizes the training opportunities already available in many developing countries.

18. There is a need in developing countries to establish and/or strengthen links between research and development and the production sector in a strategy that mixes innovative and traditional technologies. The Consultation also underlines the importance of capacity development in the production of capital goods and spare parts, as well as of introducing appropriate repair and maintenance systems.

19. The local manufacture of rural transport equipment has to take into consideration the real needs of farmers as well as of rural communities that are identified as target groups. The analysis of the demand would include not only the existing demand per se, but also the future demand generated by rural development programmes and projects.

20. In promoting the local manufacture of rural transport equipment, international, regional and subregional co-operation is essential to overcome specific constraints, such as the lack of appropriate raw materials, intermediate goods and capabilities for design. Co-operation could also include areas such as standardization of spare parts, quality control, exchange of information in regard to technology, markets and joint financing of projects of common interest.

21. Consideration needs to be given to the rehabilitation and upgrading of existing capital goods plants, as well as small enterprises engaged in the manufacture and servicing of rural transport equipment. The production could be undertaken in segments but within a unified system.

22. Co-operation between industrialized and developing countries and between the developing countries themselves, in the form of joint activities, including joint-venture projects, may be stimulated by bilateral and multilateral aid programmes that lead to self-reliance.

23. Finance from international, regional and national institutions is necessary to provide aid and co-operation, including credit, to existing plants, especially those in need of rehabilitation, and to promote new small and medium-scale production units. To this end, the creation of an economic environment conducive to generating greater external and domestic financial flows and investments in the sub-sector, as well as to instituting policies to facilitate access to credits through appropriate guarantee schemes, is needed.

Recommendations

A. National measures

24. Developing countries should formulate, within the framework of national development objectives, goals and policies, a national agricultural engineering strategy, including programmes of action and projects within the framework of rural development strategies.

25. Taking account of the diversity of situations and communication structures of transport in rural areas, and level of industrial development, each developing country should define its own technological route, giving special emphasis to flexible small and medium-scale manufacturing units.

26. Market research and feasibility studies on specific rural transport equipment associated with each product of significance to the national economies of

developing countries should be carried out based on the real needs of the users and local conditions.

27. Appropriate measures should be taken to stimulate and sustain demand for rural transport equipment and implements through the sensitization of the rural community and raising incomes through rural industrialization programmes.

28. Mechanisms should be developed for the effective dissemination of relevant information to producers of transport equipment regarding the opportunities and assistance programmes available (credit, training, marketing etc.).

29. In promoting flexible manufacturing units, developing countries should strive to achieve cost-effectiveness by the extensive use of local resources. To ensure a successful project, special consideration should be given, inter alia, to the following factors:

(a) Training. Developing countries should develop intergrated training programmes for local producers and users of the sub-sector's outputs. Particular attention should be paid to supporting rural craftsmen and artisans in the repair and maintenance of transport equipment and spare parts production. Also, due consideration should be given to the provision of training systems for the development of the national capabilities required in mechanical engineering and design; particular attention should be given to the training of trainers;

(b) Management capacities. Special attention should be given to providing complementary training to managers in order to ensure the increased efficiency of their operations, particularly in areas such as market research, quality control, marketing and cost accounting;

(c) Technological capabilities. As design and quality control etc. are the sensitive points in local manufacture, developing countries should strengthen in this regard the linkages between existing research and development centres and universities for their mutual benefit. In this connection, existing technology centres should be strengthened and new ones created where they do not yet exist, so as to meet design requirements and facilitate the utilization of their results by the production sector;

(d) Maintenance. Local institutions should give due consideration to the importance of coupling maintenance and local production for overcoming maintenance problems with a view to giving rise to a progressive transition to the production of spare parts and, subsequently, of increasingly elaborate equipment.

30. Developing countries should establish the necessary institutional and legal framework for the implementation of such policies, including safety measures and regulations to prevent accidents and to protect the environment.

31. Developing countries should be invited to see to it that in contracts for the transfer of technology, sufficient attention is paid to their concerns and actual needs.

B. International co-operation

32. In strengthening South-South co-operation, countries with established rural transportation equipment manufacturing facilities should co-operate with other developing countries in exchanging experience and information for drawing up their national rural transport equipment plans, through a network of existing

or other appropriate subregional centres. UNIDO, on request, could assist the developing countries in this exchange of experience.

33. Appropriate mechanisms should be developed to promote co-operation agreements between enterprises, particularly the small and medium-scale industries of industrialized countries and developing countries, as well as between the developing countries themselves for fostering the transfer of appropriate technology, production and trade. Consideration should be given to sustaining in various ways the efforts of developing countries to improve their national technological institutions and policies and to upgrade the skilled manpower to reinforce domestic engineering.

34. International co-operation should aim at mobilizing financial and technical assistance resources for rural development programmes, giving due emphasis to the promotion of the rural transport sector in developing countries.

35. Developed countries active in promoting rural transport equipment should as far as posssible incorporate local skill and production facilities into their efforts. Local policies regarding materials and other resources should also be given consideration. The technology introduced must be locally adoptable.

36. It is recommended that UNIDO, in co-operation with other relevant organizations of the United Nations system should, when requested:

(a) Assist in establishing pilot plants, and provide industrial and technical extension services as a matter of priority with a view to increasing the awareness in rural communities of the need to maintain rural transport equipment, agricultural machinery and infrastructure, and assisting them in doing so, as well as in the simplification of designs;

(b) Support the establishment of mechanisms to facilitate contacts between small and medium-scale industries in developing countries and those in industrialized countries using bilateral or multilateral co-operation and aid when appropriate. This could include assistance in the organization of regional or interregional promotional meetings that would allow the participation of representatives of developing as well as developed countries, particularly industrial entrepreneurs. Such meetings would be oriented to the identification of requirements and opportunities for technical co-operation, facilitate the exchange of experience and explore possibilities of production complementarities at the regional level;

(c) UNIDO should undertake on request in-depth studies to identify technical assistance needs in the transport equipment sub-sector so as to facilitate the formulation of programmes of bilateral and multilateral aid;

(d) UNIDO should give due priority to the transport equipment sub-sector in its promotional activities;

(e) In the case of export markets, UNIDO in co-operation with the International Trade Centre (UNCTAD/GATT) should initiate market studies in order to identify the rural transport equipment needs of the countries or regions concerned complementary to national measures.

I. ORGANIZATION OF THE CONSULTATION

Opening of the Consultation

Statement of the Director-General of UNIDO

37. In an opening statement presented on behalf of the Director-General of UNIDO, the Deputy Director-General, Department for Industrial Promotion, Consultations and Technology, declared that the objectives set for the Consultation and its follow-up activities were of paramount importance to the developing countries. These included capacity building in the design and manufacture of capital goods to sustain the process of industrialization and the provision of basic services and infrastructure for rural development.

38. He recalled the successful outcome of the previous two Consultations in the sector, which, on the one hand, had led to a widely used methodology based on the determination of technological complexities being developed to identify investment projects especially in small and medium-scale industries and, on the other, to projects encompassing engineering design and specifications developed by UNIDO for small hydropower plants being implemented in some developing countries. The linkages between agriculture and industry had been the central theme of recent Consultations, which had focused on the search for alternative solutions to the problems of improving the supply of agricultural raw materials, the provision of agriculture input and the development of processing capacity, technology, entrepreneurship and marketing. The necessity of achieving a rural-urban balance and national self-sufficiency in food production had assumed a critical relevance in view of the sharp growth in population.

39. The latter objective could not be envisaged without substantial and sustained international financial and technological co-operation on the part of the developed countries matched by imaginative policies and programmes on the part of the developing countries. The current Consultation was one of the instruments for devising approaches that would contribute to policy formulation and international co-operation. He concluded by saying that the main objective of the Consultation was to determine the most effective means by which the rural transport sub-sector could contribute to the solution of the problem of food shortages and to the attainment of the industrial objectives of developing countries.

Statement by the Director, System of Consultations Division, UNIDO

40. The Director of the System of Consultations Division, UNIDO, began by stating that the decision of the Industrial Development Board to convene a Third Consultation on the Capital Goods Industry with Emphasis on Rural Transport Equipment was in recognition of the agricultural sector as the backbone of the economy in most developing countries. He reminded the participants that the focus of the Consultations of the 1988-1989 biennium had been on those industrial sectors capable of providing a vital input to agriculture. He briefly reviewed the preparatory work for the Consultation, which had led to the identification of the two issues submitted for the consideration of the meeting. All the available evidence suggested that transport was often the missing link in the agricultural production system and responsible for a large part of the crop losses. That problem was aggravated by a lack of effective sector-wide and multimodal transport planning. The development of transport infrastructure, therefore, including the provision of rural feeder roads, as well as the manufacture of suitable rural transport equipment, had become a basic necessity in many developing countries.

41. It was therefore desirable that the choice of transport modes and their linkages should be clearly defined to increase sensitivity to the issue and to mobilize action at all levels including rural communities, small and medium-scale enterprises, research institutions etc. He reiterated that the objective of the Consultation was a realistic analysis of the needs, problems and concerns of the transport equipment sub-sector, some of which had been identified in the two issue papers (ID/WG.487/2 and ID/WG.487/3). Special attention was to be given to the circumstances of the least developed countries.

42. Although the subject-matter of the Consultation seemed narrowly defined, rural transport equipment had a much broader economic and social impact in view of its many linkages with the rest of the national economy in developing countries. Adequate transport facilities were also a basic pre-condition for successful rural development programmes.

43. He concluded by saying that the Consultation was expected to formulate a set of concrete and practical recommendations at both the national and international levels capable of surmounting the obstacles to the development of the sub-sector.

Election of officers

44. The following officers were elected:

Chairman: José Libert (Belgium), Secrétaire général, Conseil central de l'économie

Rapporteur: Isaya A. Onyango (Kenya), Senior Planning Officer, Rural-Urban Planning and Small Scale Enterprises Development, Ministry of Planning and National Development

Vice-Chairmen: Merwane Daouzli (Algeria), Sous-directeur, Ministère de l'industrie

Anwarul Hoq (Bangladesh), Additional Chief Engineer, Atlas Bangladesh Ltd.

Yuri I. Dobrolyubov (Union of Soviet Socialist Republics), First Deputy Chief, Department of Foreign Economic Relations, Ministry of Automobile and Agricultural Machine Building of the Union of Soviet Socialist Republics

Adoption of the agenda

45. The Consultation adopted the following agenda:

1. Opening of the Consultation
2. Election of Chairman, Vice-Chairmen and Rapporteur
3. Adoption of the agenda and organization of the work
4. Presentation of the issues by the Secretariat
5. Discussion of the issues at the plenary:
   Issue 1: Strategies for the integrated development of rural transport equipment in developing countries;
   Issue 2: Promotion of and international co-operation in local manufacture of rural transport equipment.
6. Conclusions and recommendations
7. Adoption of the report

Documentation

46. The documents issued prior to the Consultation are listed in annex II.

Adoption of the report

47. The report of the Third Consultation on the Capital Goods Industry with Emphasis on Rural Transport Equipment was adopted by consensus at the final plenary on 8 December 1989.

II. REPORT OF THE PLENARY SESSIONS

Opening plenary

Presentation of the issues

Issue 1: Strategies for the integrated development of rural transport equipment in developing countries

48. A member of the Secretariat introduced issue 1. He stated that apart from being a key sector for investment in developing countries, transportation was a crucial factor in economic and social progress. In the light of the agricultural production system on the one hand and the distribution and consumption characteristics of agricultural produce on the other, two types of transport equipment could be distinguished. The first type was used to transport agricultural produce from production sites to storage facilities or processing plants over a short distance and the second type to expedite it further to urban markets or export terminals over a longer distance. Such definitions, however, did not exclude the equipment and machinery needed on the plantation or other harvesting sites. With respect to the conditions necessary for an integrated approach to the development of the rural transport equipment sub-sector, he said that the following considerations must be taken into account:

(a) The integration of the rural transport system into the elaboration and application of national economic and social development plans;

(b) An in-depth evaluation of different modes of transportation and their interlinkages;

(c) The development and maintenance of road networks;

(d) The active participation of all the actors concerned in the elaboration and realization of master plans for rural transportation;

(e) The creation of institutional support structures for the multimodal and sectoral planning of rural transportation.

Those considerations must inevitably be viewed within the particular national context of each country or region.

Issue 2: Promotion of and international co-operation in local manufacture of rural transport equipment

49. A member of the Secretariat introduced issue 2. He stated that in most developing countries the manufacture of agricultural implements and machinery had had a favourable effect on the industrialization process. Nevertheless those countries desirous of realizing their full potential were confronted with numerous constraints, which ranged from the lack of raw materials and skilled labour to the limited absorptive capacity of domestic markets. In view of the small and varied market demand, multi-purpose plants had obvious advantages. Small and medium-scale enterprises of the industrialized countries, characterized by production flexibility and adaptability to changing market conditions, could generate many innovations corresponding to the particular needs of developing countries in the sub-sector. With respect to international co-operation, the exchange of experience, training, maintenance and supply of spare parts, transfer of technology etc. were among the priority areas capable of contributing to the local manufacture of rural transport equipment in developing countries.

Summary of discussion

50. A number of participants underlined the important role of the sub-sector of rural transport equipment in view of the linkage it provided between agriculture and industry. Since the economic backbone of many developing countries continued to be the agricultural sector, the provision of industrial input to it often represented an ideal strategy for industrialization.

51. Most participants were of the opinion that the rural transport equipment sub-sector was an important factor in enhancing agricultural production, which had positive effects on food security, income levels and employment opportunities for over 80 per cent of the population in developing countries who depended on agriculture for their livelihood. Increased employment opportunities and rising incomes for the rural population would also ensure that a rural-urban balance, the concern of most developing countries, was achieved.

52. Participants from developing countries concurring with the above assertion maintained that, in spite of the recent progress made by some developing countries in the sub-sector, the requirements often outstripped national capabilities and therefore international co-operation could make a real and tangible contribution to the promotion of the industry in the developing countries.

53. The potentialities for international co-operation existing in some developed countries with respect to technology transfer, industrial maintenance, technical skills training, engineering services and consultancy, planning and management capabilities etc., which could be put at the disposal of developing countries, were cited briefly. International agencies such as UNIDO were invited to make increasing use of these services for the initiation of technical co-operation and other development projects.

54. Considerable concern was voiced that the insufficiency of rural transport systems in most developing countries aggravated the already chronic problems arising from population growth, external indebtedness, de-industrialization etc.

55. The documentation that had been submitted by the Secretariat to the Consultation was widely commented on as having adequately identified and highlighted the key forces shaping the sub-sector. It enabled a better understanding of those forces as a requisite for the formulation of concrete and effective recommendations.

56. The need for an integrated approach, which took into account problems of infrastructure, maintenance, training, appropriate technology etc., was repeatedly emphasized. That approach, of necessity, required a preliminary stage of detailed planning with respect to infrastructure, communication, the linkage between agriculture and industry, transport modes and the external input for the development of the capital goods used in agriculture including rural transport equipment.

57. The activities of the Secretariat with respect to technical co-operation, investment promotion and the development and transfer of technology were described by staff members. It was announced that a one-page summary of each of those programmes, highlighting the capabilities of the Organization with regard to the capital goods sector, would be made available to the participants.

58. It was stressed that, in view of the many linkages that an efficient transport network would have with the rest of the economy, the close participation and collaboration of government officials, entrepreneurs, technologists and leaders of rural communities in designing and implementing rural transport

schemes was essential. A lack of such co-ordination in the past had often led to failed attempts at rural development.

Closing plenary

59. The Chairman of the Consultation, after the formal approval of the report by the plenary, stated that the conclusion of the week's deliberation signified a watershed in the evolution of the System of Consultations. It was not only the final consultation of the biennium 1988-1989 with a special focus on agro-industries, but also the last one in a decade in which the System of Consultations had placed its imprint on multilateral industrial development co-operation. Thus, the System had gained the growing support of both developing and industrialized countries by adopting a businesslike and pragmatic approach to tackling complex sectoral issues. That success was reflected in an increased participation of entrepreneurs and industrialists particularly among the delegations of certain developed countries. It had also demonstrated an exemplary spirit of co-operation and goodwill among all groups, often resulting in the formulation of innovative concepts and effective measures to remove the obstacles to industrial development. The System of Consultations was, therefore, well-positioned to take up the challenges of the following decade.

60. The Director of the System of Consultations Division, in expressing his thanks to the Chairman for the guidance and wisdom displayed throughout the discussions, stated that it was fitting that the Consultation had been presided over by a person who had attended and contributed substantially to the Consultations of the biennium 1988-1989 and whose personal support and commitment had played a vital role in their success. As for the follow-up actions arising from the Consultation, he stated that they were the collective responsibility of those attending and those to whom the recommendations were addressed; obviously the developing countries themselves had the foremost responsibility. As the Consultation had demonstrated, however, a large measure of support was called for, which could be rendered by the many forms of international co-operation identified during the week's deliberations. As for those recommendations directed to international agencies such as UNIDO, he said that the Secretariat would draw up a detailed plan of action making use of all the capabilities of the Organization for their implementation. He concluded by underlining the special responsibility of those attending the Consultation, to whom he expressed his sincere thanks for their contribution.

III. REPORT OF THE DISCUSSIONS ON ISSUE 1: STRATEGIES FOR THE INTEGRATED DEVELOPMENT OF RURAL TRANSPORT EQUIPMENT IN DEVELOPING COUNTRIES

61. The participants agreed that the development of the rural transport equipment sub-sector should be undertaken as an integral part of overall national strategic planning for rural development, depending on the geography, climate, natural endowments and socio-economic conditions of each country. At the macro-economic level, the development should be based on linkages between agriculture and industry, infrastructure and transport networks, and a rural-urban balance in order to achieve the socio-economic objectives of the country. Strategic planning should be based on an objective assessment of the needs of the different regions and areas within the country and should seek to promote regional complementarities in the country's development.

62. The participants also agreed that rural development must be based on the stimulation of agriculture as an engine of growth. Areas with a high agricultural potential should be selected for intensive development. Agricultural development not only ensured the food supply, but also created wealth in rural areas thus enhancing the purchasing power of the rural population. In turn, that had a multiplier effect on the development of other economic and industrial sub-sectors including that of transport equipment.

63. In the formulation of plans for rural development, participants stated that care must be taken to ensure that the food production chain was comprehensively integrated, starting with primary agricultural production, on-farm and off-farm transport, storage of raw materials, cooling and refrigeration, processing, storage of finished goods and the establishment of marketing and distribution channels to reach consumers in the local and export markets. Physical infrastructure played a determinant role and special attention must be paid to its development and maintenance. Of major importance was the construction or extension of feeder roads, tracks, railways, waterways, water and electricity supplies, telecommunications and transportation networks based on a variety of transport equipment.

64. A number of participants stressed that an integrated approach to strategic planning for rural development should be based on close co-operation between the ministries concerned, such as those responsible for economic planning, rural development, industry and commerce, as well as between local authorities and decision makers at all levels. Professional organizations, too, had an important role to play. Evidently, most of the onus for the formulation of strategic plans and the development and extension of infrastructural facilities fell on Governments and their budgetary resources and, where available, external aid. Plans should be based on carefully prepared feasibility studies, which should include cost-benefit analyses from a national economic standpoint and also be politically acceptable.

65. Several participants pointed out that it was important to establish the necessary institutional infrastructure to ensure the effectiveness and sustainability of rural development plans and the most efficient use of scarce resources to obtain maximum benefits. Institutional infrastructure should encompass overall planning, pre-investment studies, industrial and investment promotion, industrial and technological information, marketing support and the development of human resources.

66. With regard to the integrated development of the transport system per se, most participants emphasized the importance of utilizing a combination of both traditional and modern transport equipment. Efforts should be made to improve traditional equipment in order to upgrade its efficiency and safety and to

reduce human exertion. Transport equipment must be adapted to suit local geographical, climatic and socio-economic conditions. The manufacture of simple transport equipment by small and medium-scale enterprises should be encouraged in rural areas. Such equipment included carts, trailers, wheelbarrows, conveyors, bicycles, boats and other non-motorized equipment. The manufacture of spare parts should also be encouraged. Other participants spoke of the importance of developing the capital goods industry to assemble and manufacture motorized transport equipment. Imported transport equipment should be adapted to suit the specific conditions in and the requirements of developing countries. The selection of transport equipment for local manufacture should be studied carefully to ensure its technical feasibility and commercial viability. The importance of developing a local capability for the repair and maintenance of transport equipment was also highlighted.

67. A number of speakers stressed the importance of standardizing transport equipment in order to enhance the possibility of manufacturing it, and also to reduce the volume and costs of stocks of spare parts. Others emphasized the desirability of developing production complementarities on a subregional basis in order to improve economies of scale and increase the use of locally available raw materials and local technical capabilities, which could also expand markets and further economic co-operation between developing countries. A case was made for the establishment of multi-purpose factories that could manufacture a variety of transport equipment. The importance of boat-building for waterways and coastal shipping should not be overlooked.

68. Many participants raised the point that on account of their low purchasing power, people in rural areas were not able to acquire even simple and low-cost transport equipment. About 80 per cent of the small farmers resorted to head loading, about 8 per cent to animal-drawn vehicles and only 2 per cent to motorized equipment. Ways and means had, therefore, to be found of raising purchasing power in rural areas, especially by concerted action to improve agricultural yields and to extend agriculture in areas with a high potential, by devising innovative credit schemes and creating and expanding non-farm employment opportunities; for example, in the agro-processing sector. It was recommended that people in rural areas should group together to share transport equipment. Efforts should also be made to increase the value added in the food production chain. One participant commented that in countries where prices were guaranteed to farmers, purchasing power was higher and more use was made of transport equipment.

69. Some participants mentioned that there was a lack of capital in rural areas for the establishment of factories to manufacture transport equipment. Given the priority of the agricultural sector, and the essentiality of having adequate transport systems and equipment if the sector and rural development were to flourish, special efforts should be made to ensure adequate financing for the sub-sector through national development banks and the support of bilateral and multilateral finance institutions. Often, external aid was made available for infrastructure projects, but not for manufacturing projects.

70. A word of caution was voiced concerning the proper use of such transport equipment: there should be no overloading, nor should goods vehicles be used for passengers as many accidents had occurred.

71. One participant stated that donor countries should harmonize their policies and co-ordinate their activities regarding rural industrial development. There should be an organization in the recipient country to co-ordinate aid at the national level. Technical co-operation should cover the formulation of strategic plans, feasibility studies, product design, investment promotion and the training of trainers.

72. A few participants proposed that institutions for applied transport should be established on a regional basis to carry out research and development on means of transport and to disseminate such information. One participant proposed that material other than wood should be used as far as possible in boat-building in order to reduce deforestation and to protect the ecological balance. Another participant requested UNIDO to prepare a guide including a check-list of activities and elements that would form the basis for rural industrial development and especially the development of rural transport equipment. Country studies should also be made.

IV. REPORT OF THE DISCUSSIONS ON ISSUE 2: PROMOTION OF AND INTERNATIONAL CO-OPERATION IN LOCAL MANUFACTURE OF RURAL TRANSPORT EQUIPMENT

73. The situation in relation to the production and use of rural transport equipment described by a number of participants was greatly influenced by the diversity of conditions and levels of development in rural areas. In some developing countries, the production of capital goods was quite advanced while in others it was at the initial stages. The sub-sector was characterized by the production of a wide range of equipment, such as animal-drawn carts, bicycles and motorized forms of transport including those forms suitable for either short or long distances. Countries with coastlines and river systems also relied on water transport and small boats and barges.

74. The equipment was being manufactured in a number of ways from the simple assembly of imported kits to full production using an increasing number of locally manufactured components. It was noted by several participants that the level of technology could be simple; it was not always necessary to have the most sophisticated level. An example was given of the development of aeroplane using an automobile engine that ran on normal fuel. Nevertheless, it was considered important that the equipment should be adapted to the needs of the users and to local conditions.

75. Among the constraints on the production of rural transport equipment in developing countries were the lack of raw materials, spare parts and foreign exchange to import the input needed. On the demand side, a major constraint was the low purchasing power of the farmer, which made the purchase of equipment difficult.

76. Many participants referred to the needs and requirements of developing countries for international co-operation in the local production of rural transport equipment. The need for training, particularly in maintenance, for the manufacture of spare parts and the building of management capabilities was often mentioned. The importance of quality and standardization was stressed, as well as the need to strengthen design capabilities. It was considered that emphasis should also be placed on rehabilitation and the strengthening of existing facilities, as in some countries there was an underutilization of capacity.

77. The problem of financing was highlighted by a number of participants. There was a lack of financial resources for setting up production units, as well as for purchasing equipment once it had been manufactured. Some participants considered that international organizations, as well as bilateral donors, should make available special lines of credit to finance enterprises that produced locally manufactured rural transport equipment.

78. Marketing aspects received much attention. A knowledge of both the existing and potential market was seen as important. A number of participants indicated that a good market study was a prerequisite for undertaking the production of rural transport equipment. Other participants stressed the need to train entrepreneurs in marketing. Subcontracting exchanges, both between developing countries and as a part of North-South co-operation, was indicated by one participant as one way of expanding the market for rural transport equipment and components.

79. Small and medium-scale industry and the private sector were mentioned by a number of participants as playing an important role in the development of the sector in rural areas. Those industries were well adapted to flexible

manufacturing systems and to producing a wide range of products for smaller markets. One participant said that preference should be given to small and medium-scale industries because of their closer knowledge of local conditions.

80. One participant indicated that importance should given to: making maximum use of locally available raw materials; generating maximum value added, using local labour, developing new products and assembling components for smaller markets.

81. A number of participants from industrialized countries described their experiences in technical co-operation and contributing know-how to the rural transport sector in the provision of training, feasibility studies and the setting up of assembly workshops and pilot projects. Those experiences could be useful for developing countries in understanding better the reasons for success and failure. Knowledge of the market was a critical factor that had contributed, in one case, to the success of a project, while an incorrect market assessment had, in another case, led to failure.

82. In indicating opportunities for technology transfer, one participant stated that universities could play an important role in the process of rural development, particularly in project identification and formulation, and financial management, as well as in the research and development of specific technological solutions.

Annex I

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Annex II

LIST OF DOCUMENTS

Issue papers

Issue 1:	Strategies for the integrated development of rural transport equipment in developing countries	ID/WG.487/2
Issue 2:	Promotion of (and international co-operation in) local manufacture of rural transport equipment	ID/WG.487/3

Background papers

Transport equipment for agricultural and rural development: the experience of China	ID/WG.487/1
Study on the rural transport equipment industry in Latin America	ID/WG.482/1(SPEC.)
Rural transport equipment for agricultural freight in Asia	ID/WG.482/2(SPEC.)
Inland transport equipment and its role in industrial and agricultural development: importance of road transport, the perceived requirements for transport especially for rural development	ID/WG.482/3(SPEC.)

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